

**REMARKS**

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated October 15, 2004 and the Advisory Action dated March 18, 2005 have been received and their contents carefully reviewed.

No claims have been amended. Accordingly, claims 4-10 and 15-20 are currently pending. Reexamination and reconsideration of the pending claims are respectfully requested.

Applicants believe the application is in condition for allowance and early, favorable action is respectfully solicited

In the Office Action, claims 4-10 and 15-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over any of U.S. Patent No. 5,767,209 to McNally (hereinafter "McNally"), U.S. Patent Application Publication No. 2003/0144135 A1 to Llinas et al. (hereinafter "Llinas"), Korean Patent Laid-Open No. 98-25282 to Lee et al. (hereinafter "Lee"), and/or European Patent Application No. EP 0839836 A1 to Sancho Royo et al. (hereinafter "Royo.")

The rejection of claims 4-10 and 15-20 is respectfully traversed and reconsideration is requested. Claims 4-10 and 15-20 are allowable over the cited references in that each of these claims recites a combination of elements that none of the cited references, singly or in combination, teaches or suggests.

"To establish a *prima facie* case of obviousness, three basic criteria must be met." M.P.E.P. §2143. There must be motivation or suggestion, either in the references or in the knowledge generally available in the art, there must be a reasonable expectation of success, and the prior art references must teach or suggest all the claim limitations. M.P.E.P. §2143. (emphasis added)

In the Office Action the examiner has failed to establish a *prima facie* case of obviousness. The Office Action does not evidence how the prior art teaches all the elements of the claims. The Office Action also does not evidence why a worker with general skill in the art would be motivated to modify the teachings of any of the cited reference to arrive at the claimed

subject matter. Furthermore, the Office Action does not provide an explanation regarding a reasonable expectation of success.

The Office Action fails to show how the prior art teaches or suggests all the elements of the claims. The Office Action states that each prior art reference “discloses the invention substantially as claimed.” (Office Action p.4). “Substantially as claimed,” even if true, does not meet the burden of teaching “all the claimed elements” as required in § 2143 of the M.P.E.P. The Office Action also admits that “none of these primary references explicitly discloses that the silica support has been dehydroxylated or that the surface of the silica support after reaction with the transition metal compound is an alkoxy wherein the alkoxy group comes from the transition metal compound by cleavage of an O-A’ bond.” (Office Action p.4). Additionally, the prior art cited does not teach or suggest the limitation of “a comprises an integer of from 4 to 8,” a limitation that is found in all the independent claims.

The Office Action also fails to provide a motivation for why one of ordinary skill in the art would modify the teachings of the prior art to arrive at the claimed invention. The Office Action merely states a conclusion that “it would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of any of the primary references” and expect beneficial results.

Therefore, the Office Action fails to establish a *prima facie* case of obviousness because it does not explain how the prior art teaches all of the claimed elements, nor does it explain how to modify or the motivation for modifying the prior art’s teachings to result in the claimed elements.

Even if, *arguendo*, the Office Action did present a *prima facie* case of obviousness, Applicants present that the submitted evidence of advantages and superior properties effectively rebuts the obviousness rejection.

“A *prima facie* case of obviousness based on structural similarity is rebuttable by proof that the claimed compounds possess unexpectedly advantageous or superior properties.” *In re Papesch*, 315 F.2d 381 (CCPA 1963). *See also*, M.P.E.P. §2144.09. “An affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior

art to be effective to rebut a *prima facie* case of obviousness.” *In re Burckel*, 592 F.2d 1175 (CCPA 1979). *See also*, M.P.E.P. §716.02(e). “Presence of a property not possessed by the prior art is evidence of nonobviousness.” *In re Papesch*, 315 F.2d 381 (CCPA 1963).

Both the specification of the pending application and Dr. Bun Yeoul Lee’s affidavit filed on February 15, 2005, evidence how the claimed invention benefits from a number of advantages and superior properties not shared by the compounds disclosed in the prior art. The evidence supports a finding that the claimed compounds provide a catalyst activity that is effectively higher than what is available in the prior art. (Affidavit p. 2). Additionally, the claimed invention also benefits from reduced reactor fouling, and yields a better defined bulk density of polymer. (Affidavit p. 2). Therefore, Applicants have effectively rebutted the obviousness rejection presented in the Office Action.

The Affidavit properly compares and distinguishes the prior art from the claimed invention. In the Advisory Action the examiner stated that the comparison was not clear because Table 1 and 2 of the Affidavit show results achieved under different conditions. Even if the conditions were not exactly the same for the two experiments, Tables 1 and 2 still convey the necessary information to properly show how the claimed invention differs from the prior art. Namely, these Tables, together with the related disclosure, demonstrate how the catalyst activity is dependent on the type of compounds used. The Tables also illustrate how the compounds of the present invention promote a catalyst activity that is significantly higher than what is achievable with the prior art compounds.

Additionally, Applicants present that Table 1 and 2 are only a portion of the Affidavit and that there is additional information in the submission to show how the prior art differs from the claimed invention. For example, in paragraph 7, Dr. Lee states that the catalysts were prepared according to each of the cited prior art references. Dr. Lee states that those compounds were then compared to the claimed invention. The data shows that the claimed invention had a substantially higher catalyst activity. Furthermore, paragraph 8, discusses a substantial unexpected benefit resulting from the relationship between the length of the carbon chain between the Cp ring and the active functional group. These statements are independent of the remarks made in connection with Table 1 and 2.

These benefits derive from claimed features that are not present in the prior art. Specifically, Lee and Royo only disclose silicon containing compounds. Llinas discloses silicon containing compounds and compounds that have materially different structures. McNally discloses non-silicon containing compounds but does not teach "a comprises an integer of from 4 to 8" as required by the claims. A review of the McNally structures reveals that the only "a" value disclosed ranges from 1 to 3. Also, in addition to the teachings even the examiner recognized were lacking from the disclosure of the prior art, none of the prior art references teach compounds with a -C-OX- functional group incorporated in the metallocene to yield supported catalysts that also exhibit particularly good activity. These differences in effect result in a compound with unexpectedly superior activity and reduced reactor fouling. Accordingly, the prior art does not render the claimed invention obvious.

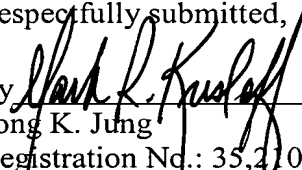
In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner deems that a telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

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